

BALUN AND GROUNDPLANES FOR DECADE BAND TAPERED
SLOT ANTENNA, AND METHOD OF MAKING SAME

ABSTRACT OF THE DISCLOSURE

An antenna apparatus (10) includes an antenna element (12, 412, 512) that has conductive material with a recess therein. The recess includes a balun hole (36, 536), and a tapered slot (37, 537) communicating at its narrow end with the balun hole. The balun hole is approximately rectangular, has a peripheral edge defined by conductive material, and contains air. The tapered slot has a shape which is optimized as a function of factors that include the balun hole design. Each slot edge follows a predetermined curve other than a first-order exponential curve.